

Online Information Disclosure: Motivators and Measurements

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To increase their revenue from electronic commerce, more and more Internet businesses are soliciting personal information from consumers in order to target products and services at the right consumers. But when deciding whether to disclose their personal information to Internet businesses, consumers may weigh the concerns of giving up information privacy against the benefits of information disclosure. This article examines how Internet businesses can motivate consumers to disclose their personal information. Based on a synthesis of the literature, the article identifies seven types of extrinsic or intrinsic benefits that Internet businesses can provide when soliciting personal information from consumers. Through comprehensive conceptual and empirical validation processes, the article develops an instrument that allows Internet businesses to gauge the preference of consumers for the various types of benefits. By testing a set of nomological networks, some ideas are presented to Internet businesses about what types of benefits may be more effective given the personality traits of particular consumer populations. Besides providing a foundation for efforts aimed at developing theories on information, privacy and information disclosure, the results of this research provide useful suggestions to Internet businesses on how best to solicit personal information from consumers. Implications for research and practical application are discussed.

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1. INTRODUCTION

The growth of electronic commerce has been phenomenal in recent years. Increasingly, businesses in retail and service industries are setting up Internet storefronts to deliver product information, fulfill purchase requests, and provide swift value-added services. Consumers who want to enjoy these services often need to disclose personal information to Internet businesses.¹ But it is difficult for consumers to subsequently control how their personal information may be used by Internet businesses. Real-life stories of information misuse (e.g., unauthorized disclosure to third parties) frequently appear in newspapers or trade journals. Thus, an increasing number of consumers are becoming anxious about their information privacy.² The fear of privacy invasion may cause many consumers to withdraw from online transactions; a recent report by Forrester Research shows that the concern of consumers about privacy invasion might have cost the travel industry \$2.8 billion in 2001.³ Clearly, Internet businesses need to make it more pleasant or less hazardous for consumers to disclose their personal information.

There are two ways that Internet businesses can encourage consumers to disclose their personal information. First, Internet businesses can devise appropriate measures to address the privacy concern of consumers. Both the academic and business communities have been enthusiastic about this line of work. For example, several studies have conceptualized various dimensions of privacy concerns and proposed measures to resolve such concerns for consumers (e.g., Culnan [1993], Smith et al. [1996], and Stewart and Segars [2002]). Many Web sites have published privacy statements, acquired certified trust seals, or adopted standards, such as the Platform for Privacy Preferences (P3P), to highlight the procedures that they follow to protect consumer privacy [Jamal et al. 2003]. Prior research has suggested that consumers welcome these efforts [Culnan and Armstrong 1999; Milberg et al. 2000; Phelps et al. 2000] but in practice consumers often do not seek or adopt privacy protections (see Section 1.1).

Second, Internet businesses can provide consumers with explicit benefits in exchange for their personal information.⁴ This approach can complement the previous approach in inducing consumers to disclose their personal information. In reality, many consumers voluntarily disclose their personal information to Web sites without even looking at the published privacy statements. Indeed, if the benefits and risks of providing personal information to Internet businesses are seen as a bundled deal, then the risks of privacy invasion are merely a cost that consumers pay for acquiring the benefits. In principle, Internet businesses can provide more benefits to offset the risks, thereby enhancing the bundled

¹Throughout this article, we use the terms “Internet business” and “Web site” interchangeably because Internet businesses typically function in the form of Web sites.

²Information privacy has been defined as the ability of individuals to control the collection and subsequent use of their personal information [Westin 1967].

³Refer to <http://www.forrester.com/ER/Research/DataSnapshot/Excerpt/0,1317,13989,FF.html>.

⁴In a broader sense, protecting information privacy can be considered an implicit benefit to consumers.

deal to consumers. Various empirical studies have shown that consumers are willing to give up privacy in return for other benefits ([e.g., Hann et al. [2002], Milne and Gordon [1993] and Westin [1999]). Some Internet businesses, in fact, offer exclusive benefits when they solicit consumer information [Hagel and Rayport 1997]. Little research, however, has studied the types of benefits that can induce consumers to disclose their personal information.

It is important to study such benefits because different consumers are likely to respond differently to the various benefits, depending on whether the benefits are congruent with their preferences.⁵ Hence, to be effective in soliciting personal information, Internet businesses need to provide benefits that are in line with the interests of their consumers. In this article, we report research to advance knowledge in this direction. Our research questions are:

- (1) what benefits are effective in inducing consumers to disclose their personal information to Internet businesses?
- (2) how can Internet businesses gauge which benefits are more appealing to their consumers?
- (3) what personality traits of consumers may be related to the various types of benefits?

The first research question is addressed by a synthesis of literature from related disciplines to identify possible types of benefits. The second research question is addressed using a rigorous validation process that yields an instrument to measure consumers' preferences for these types of benefits. The third research question is addressed using a theory-based nomological network that relates personality traits of consumers to their preferred types of benefits.

While prior studies have examined factors that deter consumers from disclosing their personal information, this research takes the opposite perspective by investigating factors that motivate consumers to disclose their personal information. There are several advantages to this focus. First, it opens new arenas for Internet businesses to entice consumers with appropriate incentives so that consumers would more likely participate in online transactions. Second, the developed instrument provides a convenient and effective means for Internet businesses to understand the preferences of consumers which is useful for devising personalized incentive packages when a transaction entails personal information from consumers. Finally, together with past research on privacy concerns ([e.g., Culnan and Armstrong [1999], Smith et al. [1996] and Stewart and Segars [2002]), the identified benefits could help construct a comprehensive model of privacy that results in both benefit and cost considerations when consumers disclose their information to Internet businesses. The developed instrument could then ease future efforts that are required to operationalize and test such a theoretical model.

⁵This is in line with the literature on benefit congruency [Chandon et al. 2000] and the compatibility principle [Tversky et al. 1988].

1.1 Privacy Concerns, Protection Technologies, and Benefits

Prior research has identified four key information privacy concerns of consumers. These include excessive collection of, improper access to, unauthorized secondary use of, and errors in storing and maintaining consumer information [Smith et al. 1996]. To ease these concerns and promote consumer participation in online activities, various privacy enhancing technologies (PET) have been developed. These PETs can be broadly classified into three categories: control, preference management, and identity management tools ([e.g., Cranor [2003a], Hochheiser [2002], Kobsa and Schreck [2003], and U.S. Senate Judiciary Committee [2002]).⁶

Although many software tools and popular Web browsers have incorporated PETs [Wang et al. 1998], the PETs do not seem to be well adopted and used by consumers. For instance, Fox et al. [2000] and Turow [2003] have found that most consumers do not search for ways to protect their information on the Internet. Even for those who are aware of privacy control and protection strategies, the usage of such strategies is not common [Dommeyer and Gross 2003]. There are three possible reasons that may contribute to these findings. First, it is not easy for consumers to use PETs. They often need to bear some infrastructure, learning, or usage costs, and they may be skeptical about the effectiveness of these technologies [Cranor 2003b; Goldberg 2002]. Second, even if consumers recognize the need to protect their privacy, they may inadvertently choose not to take any action because of bounded rationality or discounting of future risks associated with information provision [Acquisti 2004a, 2004b]. Finally, some consumers may decide to ignore protections and disclose their personal information to complete a transaction or use a Web site [Fox et al. 2000] or to enjoy immediate gratifications from some provided benefits [Acquisti 2004b; Hann et al. 2002; Milne and Gordon 1993].

It is obvious that consumers are concerned about privacy, and technology alone may not be sufficient to address their concerns. However, they often voluntarily disclose their personal information. It is useful to study what could enhance this voluntary behavior. In fact, the disclosure of consumer information is often considered a second exchange between firms and consumers in the sense that consumers may surrender their personal information in return for some additional offers [Culnan and Bies 2003]. It is this basic premise that motivates the current study.

This article is organized as follows. Section 2 reviews relevant literature and discusses the characteristics of various types of benefits. Section 3 presents our

⁶Popular control tools include cookie managers, advertisement blockers, and HTML filters. These software tools help consumers restrict the information that is placed on their hard disks or displayed on their computer terminals by Internet Web sites. Popular preference management tools include the P3P and third-party trust seals (e.g., TRUSTe and BBBOnline). These online standards assure consumers that any Internet businesses that display the policy/seals comply with the stated principles and practices when collecting and handling consumer information. Popular identity management tools include anonymizers, profile managers, and information brokers. These services allow consumers to engage in online activities anonymously or create multiple (often pseudonymous) user profiles so that their activities cannot be systematically traced. For detailed discussions of these protections, refer to Cranor [2003b] and U.S. Senate Judiciary Committee [2002].

research approach. Sections 4 and 5 conceptualize, develop, and validate an instrument to measure consumers' preferences for the various types of benefits. Section 6 studies how such preferences relate to the personality traits of consumers. Section 7 discusses the results and implications. Section 8 concludes the article.

2. LITERATURE REVIEW

The idea of motivating consumers to disclose their information is rooted in several theoretical perspectives. Specifically, the social exchange theory posits that people decide whether or not to carry out a social act based on an assessment of the interpersonal rewards and costs associated with the act [Emerson 1976; Homans 1961; Thibaut and Kelley 1959]. By offering benefits to consumers, Internet businesses can improve the rewards associated with the act of disclosing personal information and this may offset the costs associated with the act [Laufer and Wolfe 1977], such as giving up privacy. Similarly, the resource exchange theory posits that people trade personal information for other resources and benefits during marketing transactions [Brinberg and Wood 1983; Foa 1971; Hirschman 1980]. The expectancy theory also suggests that people evaluate benefits when computing valences which directly affect their intention to seek privacy [Stone and Stone 1990]. Finally, the flow theory posits that extrinsic and intrinsic motivations help consumers focus their attention on a Web session. This may facilitate the attainment of flow (defined as an optimal Web experience that is enjoyable and self-reinforcing), resulting in more engrossed network navigation and participation by consumers, including their tendency to disclose personal information [Csikszentmihalyi 1975; Hoffman and Novak 1996]. Since benefits could raise the motivations of consumers and hence indirectly lead to the flow state, they may play a part in influencing human decisions regarding information privacy or disclosure.

Previous research has identified various motivation forces that influence consumer behavior. Specifically, economic analyses often assume that people make consumption choices based on utilitarian criteria, such as monetary gain or time saving. The psychology literature has examined how needs affect human decisions [Maslow 1970]; need arousal is a strong motivation force that drives human actions, and needs pertaining to material comfort, self-actualization, or social recognition often dictate decisions [Hanna 1980; Howard and Sheth 1969; Maslow 1970]. Integrating the economic and psychology perspectives, the marketing literature suggests that consumer behavior is motivated by value, which is shaped by both economic (utility-related) and psychological (needs-related) factors [Babin et al. 1994; Dhar and Wertenbroch 2000].

In general, benefits can be classified into those providing extrinsic motivation and those providing intrinsic motivation [Davis et al. 1992; Holbrook 1999]. Extrinsic motivation occurs when people seek benefits for the purpose of accomplishing other goals [Davis et al. 1992; Hilliard 1950; Holbrook 1999]. When people are extrinsically motivated, they may perform an action to obtain benefits that serve as a means to achieve other outcomes. For example, a cash voucher and the time saved in a transaction carry no immediate consumption

Table I. Typology of Benefits

Extrinsic Benefits	Intrinsic Benefits
Monetary saving —reduce money spent, gain free gifts	Pleasure —gain pleasant experience, gain enjoyable experience
Time saving —reduce time spent, gain convenience or efficiency	Novelty —explore unfamiliar domains, fulfill information needs
Self-enhancement —assert self-concept, maintain self-esteem	Altruism —help others without motives, empathize with others
Social adjustment —gain social approval, adhere to social norm	

values but they can be used for other items or activities in the future. Intrinsic motivation occurs when people seek the consumption experience as an end in itself [Davis et al. 1992; Holbrook 1999]. When people are intrinsically motivated, they may perform a task simply because the act of performing the task offers them benefits. For example, people may help others out of pure altruistic motives [Batson et al. 1981]. Consumers may appreciate and, therefore, seek out the aesthetic pleasure or novel experience provided by some Web sites. In these cases, the benefits (helping others, aesthetic pleasure, and novel experiences) provide direct consumption values to people. Benefits can be classified as extrinsic or intrinsic, depending on whether they provoke extrinsic or intrinsic motivations. Based on this literature review, we identify seven types of benefits that could potentially motivate consumers to disclose their personal information to Internet businesses⁷ (see Table I).

2.1 Extrinsic Benefits

Extrinsic benefits provide means with which consumers can fulfill other goals. Such benefits can motivate consumer behavior because consumers desire to enrich their endowments which can then be used on future occasions. Four important types of extrinsic benefits are monetary saving, time saving, self-enhancement, and social adjustment.

Monetary saving includes discounts, vouchers, free gifts, loyalty points, etc. [Ailawadi et al. 2001; Chandon et al. 2000; Schindler 1998; Sweeney and Soutar 2001]. It is one of the most prevalent factors that shape consumer behavior. In studies of economic choices, consumers often form preferences with a monetary component (e.g., price), which significantly influences their choice of alternatives [Kamakura et al. 1996; McFadden 1986, 2001]. Similarly, the prospect theory posits that a high monetary gain could cause people to stop searching for alternatives and commit on a decision [Kahneman and Tversky 1979]. Hence, monetary saving directly affects the willingness of consumers to enter online transactions, in spite of the risks of privacy invasion

⁷An offer can sometimes encompass multiple types of benefits. For example, consumers may apply for a premier online account with an organization to enjoy faster services. At the same time, these consumers may also feel happy just for being premier members of a prestigious organization. In this case, a premier membership brings to the consumers both extrinsic (time saving) and intrinsic (pleasure) benefits.

[Nowak and Phelps 1997]. It is now popular for Web sites to exploit the desire of consumers for monetary saving; many Internet businesses have indeed offered product discounts or lottery drawings to solicit personal information from consumers [Phelps et al. 2000]. People are prepared to list their personal information on mailing lists in exchange for monetary compensation [Milne and Gordon 1993]; some even rank monetary rewards above privacy protections when evaluating Web sites [Hann et al. 2002]. These empirical results provide convincing evidence to support monetary saving as a motivating factor behind consumer disclosure in an Internet context.

Time saving encompasses gains arising from better efficiency or convenience [Berkowitz et al. 1979; Berry 1979; Bhatnagar et al. 2000; Darian 1987; Gillett 1970]. An example of time saving in the Internet context is a personalized interface that enables faster access to products or services posted on a Web site [Chandon et al. 2000]. The conjecture that consumers appreciate time saving is derived from economic theories of household consumption [Becker 1965, 1993; Lancaster 1966; Ratchford 2001]. Specifically, consumers combine goods, knowledge, and time to “produce” household activities (including taking part in Internet transactions). Because time input is an opportunity cost to consumers, they may select activities that maximize overall utility but minimize time input. Hence, time saving may influence consumers because it allows them to carry out more activities. Besides price, many shoppers take into account the cost of time when evaluating products [Berkowitz et al. 1979]. Time saving is particularly relevant to Internet businesses because a key advantage of the Internet lies in its quick delivery of information and services; consumers sometimes patronize Internet stores when their total cost (including time) spent in the purchase process is low [Bhantnagar et al. 2000].

Self-enhancement includes means for people to improve their self-concept or self-esteem in relation to others [Grubb and Grathwol 1967; Shrauger and Schoeneman 1978; Sirgy 1982; Solomon 1983]. The impression management theory suggests that people may assertively boost their self-concept by communicating the best part of themselves to others so that others react positively to them [Goffman 1959; Leary and Kowalski 1990; Tedeschi and Norman 1985; Tetlock and Manstead 1985]. Further, people maintain high self-esteem by engaging in activities that emphasize their achievements or abilities [Shavitt 1990]. Previous research has reported that consumers may make choices based on symbolic factors, such as those associated with self-enhancement, rather than functional utility [Levy 1959; Sirgy 1982]. Hence, Internet businesses can potentially exploit such preferences by bundling self-enhancement benefits (e.g., enrollment in prestigious clubs) with requests for personal information from consumers.

Social adjustment refers to the need of people to establish social identities by integrating into desired social groups [Baumeister and Leary 1995; Csikszetmihalyi and Rochberg-Halton 1981; Maslow 1970; Shavitt 1990; Smith et al. 1956; Sweeney and Soutar 2001]. The self-categorization theory asserts that personal identity is less important when people try to associate with desired groups; depersonalization may, in fact, improve group cohesiveness and consistency [Turner 1982; Turner et al. 1987; Turner and Onotaro 1999].

Specifically, people may establish social identities to reduce uncertainty in general social contexts [Abrams 1994] or as a form of validation by peers [Brewer 1991; Goffman 1959]. These theoretical arguments suggest that it is possible to motivate consumers by helping them adjust to desired social contexts. Generally, consumers have a desire to align with like-minded others, and the Internet provides a convenient forum to fulfill such a desire. Hence, Internet businesses can possibly meet the social adjustment needs of people by providing appropriate benefits when soliciting consumer information.

2.2 Intrinsic Benefits

Intrinsic benefits are ends in themselves to consumers. Like extrinsic benefits, intrinsic benefits can motivate consumer behavior because they appeal to the desire of consumers for specific types of experience. Three important types of intrinsic benefits are pleasure, novelty, and altruism.

Pleasure is a state of enjoyment or pleasantness [Mehrabian and Russell 1974] which is derivable from some products or services. For example, it can be fun to participate in marketing activities such as public contests or sweep-stake drawings. Research has recognized that people have desires to maximize pleasure. The reversal theory posits that people fluctuate between two states of arousal [Russell et al. 1989]. When people are in a depressed state, they may prefer exciting activities (e.g., playing computer games), and when they are in an aroused state, they may prefer relaxing activities (e.g., listening to soft music). All these activities, however, may bring pleasure to people. Pleasure is also commonly linked to hedonic motivations—consumers have innate hedonic desires for enjoyment, amusement, fantasy, arousal, and fun [Hirschman and Holbrook 1982; Holbrook and Hirschman 1982]. The Internet can help fulfill such desires in new ways (e.g., by providing online games, flash movies, or music clips). Thus, pleasure benefits could possibly serve as an instrument for Internet businesses to solicit personal information from consumers.

Novelty encompasses means that help people fulfill their innate needs for exploration or information [Baumgartner and Steenkamp 1996; Kahn and Louie 1990; Kahn and Raju 1991]. According to the theory of optimal stimulation level [Steenkamp and Baumgartner 1992], people may attempt to adjust stimulations until their specific optimal levels are reached. Those with a higher optimal stimulation level tend to have greater desire for the unfamiliar, variety, and new information [Raju 1980; McAlister and Pessemer 1982], and one may alter consumer choices using elements that bring consumers to their optimal stimulation level. Moreover, the curiosity of consumers can be stimulated by an appropriate level of information complexity [Berlyne 1965; Piaget 1952]. When people see evidence that indicates inadequacy of their knowledge, they may be motivated to learn more [Malone 1981]. The Internet is good at providing knowledge, information, and ideas. Hence, it could be exploited to fulfill the novelty desire of people, and novelty benefits might help Internet businesses to solicit consumer information.

Altruism is manifested by acts that people carry out solely to enhance the welfare of others with no egoistic motivations [Baumeister 1982]. Numerous

studies on equity theory have indicated that people who have over benefited in the past (i.e., they received more from others than they gave back) tend to exhibit altruistic behaviors [Taylor 1991]. Besides, people are often sympathetic to others who share common key characteristics with themselves [Hornstein 1976; Krebs 1975]. This implies that consumers who received help in the past or who empathize with others are likely candidates for altruistic acts, and it is possible to motivate them with altruism benefits [Batson et al. 1981]. Internet businesses can try to meet the desire for altruism (e.g., by facilitating helping acts) when soliciting personal information from consumers.

3. THE RESEARCH APPROACH

To assess the usefulness of the seven types of benefits in motivating consumers to disclose their personal information to Internet businesses, we followed a rigorous research approach outlined by Churchill [1979] and Moore and Benbasat [1991], and conducted multiple rounds of data collection (see Figure 1) from subjects who were located in Singapore at the time of this study.

4. CONCEPTUALIZING CONSUMERS' PREFERENCES

The objective of this phase is to confirm the importance of the seven types of benefits in eliciting consumer information, and conceptualize the preferences of consumers toward these benefits.

4.1 Web Site Analysis

An extensive analysis of Web sites was carried out to see whether these seven types of benefits were indeed being offered to consumers in electronic commerce. A total of 100 Web sites with high daily traffic volumes were chosen from three lists: Fortune 500 companies, e-50 companies, and Yahoo. These Web sites feature businesses as diverse as arts and entertainment, banking and finance, electronics, health, information technology, science, society and culture, and sports and recreation. A group of five coders visited each of these Web sites and browsed through the pages to identify benefits that it offered to consumers when soliciting their personal information. Each identified benefit could be placed under one of the seven categories in Table I. Examples of such benefits are provided in Section 6.2. These results indicate that it may be practical to offer these benefits to consumers in exchange for their personal information.

4.2 Focus Group Interviews

Two focus group interviews, comprised of 18 senior undergraduate students, were conducted. The goal was to solicit their opinions on the current practices of Internet businesses. During the focus group interviews, the subjects were asked to list any benefits that they received or had a preference to receive from Internet businesses.

Two coders then compiled the listed benefits and categorized them according to the framework in Table I. Generally, the subjects varied in terms of their preferences for the benefits. However, all of them indicated a willingness to

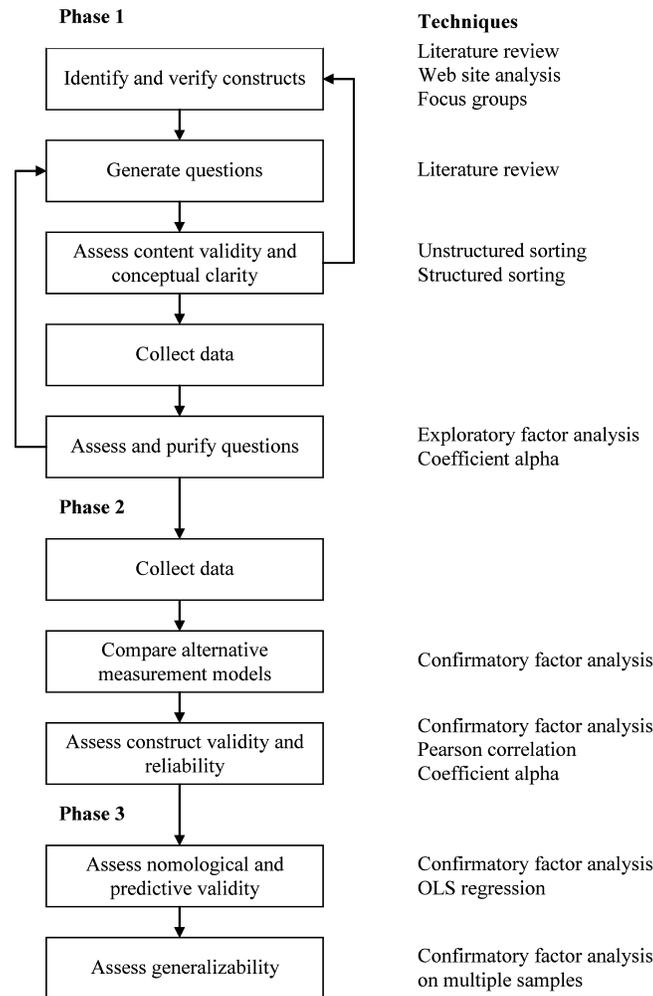


Fig. 1. The research approach.

forgo privacy when given the preferred types of benefits. These observations reinforce our belief that benefits can be used to induce consumers to disclose personal information to Internet businesses.

4.3 Item Generation

An extensive review of the economics, marketing, and psychology literature was conducted to identify studies that measured the benefits. Questions from relevant studies were extracted and modified to fit the context of information disclosure to Web sites.⁸ Based on the insights gained from the literature review,

⁸Specifically, we adapted items from Ailawadi et al. [2001], Batra and Ahtola [1990], Baumgartner and Steenkamp [1996], Bearden et al. [1989], Chandon et al. [2000], Csikszentmihalyi and Rochberg-Halton [1981], Darian [1987], Holbrook [1999], Mehrabian and Russell [1974],

Web site analysis, and focus group interviews, additional questions were generated to cover pertinent aspects of the benefits that had not been operationalized in the literature. This exercise yielded an initial instrument comprised of 59 questions.

4.4 Unstructured and Structured Sorting

To assess the content validity and conceptual clarity of the seven benefit constructs, unstructured and structured sorting exercises were performed [Moore and Benbasat 1991]. The purpose was to assess the fit between the constructs and questions and to identify ambiguous or poorly phrased questions. The detailed results are reported in Appendix A on the authors Web sites. After these two rounds of sorting, 15 items were dropped to arrive at a modified instrument with 44 questions.

4.5 Exploratory Factor Analysis

The 44-question instrument was administered to 371 senior undergraduate students who were enrolled in an electronic commerce course at a large university. Their participation was voluntary but they were given a token payment for their efforts. These students were chosen because they were familiar with Internet commerce; most of them had purchased products or services from, or provided personal information to, some Web sites in the past. All of the 44 questions were anchored to a seven-point Likert scale ranging from strongly disagree (1) to strongly agree (7).

The collected data were subjected to an exploratory factor analysis (principal component factoring with Varimax rotation). The detailed results are reported in Appendix A. After this exercise, the instrument was trimmed to 32 questions that measured the seven types of benefits. Although the factor analysis results indicated the stability of the seven benefit constructs, further refinements to the questions were necessary for two reasons. First, some of the constructs (self-enhancement, social adjustment, and pleasure) had questions that loaded highly (0.4 or greater) onto other constructs. Second, the novelty construct had a Cronbach's alpha of less than 0.7. The next phase focused on refining the instrument that measured the seven benefit constructs.

5. REFINING THE INSTRUMENT

Another extensive review of the literature was carried out to refine the instrument. Each of the 32 questions remaining from the previous phase was carefully examined and was rephrased (where necessary) or dropped (where there was redundancy) to make sure that all questions reflected key aspects of the respective benefit constructs. In addition, some new questions were added to cover pertinent aspects of the benefit constructs that had not been addressed in the previous phase. This resulted in a refined instrument comprised of 42 questions.

Mittal and Lee [1989], Olney et al. [1991], Price et al. [1995], Richins [1994], Richins and Dawson [1992], Shavitt [1990], Soloman [1983], Sweeney and Soutar [2001], Unger and Kernan [1983], and Watson et al. [1988].

Table II. Fit Indexes Before and After Respecification

Fit Index	Before Respecification	After Respecification
Chi-square goodness-of-fit index (degrees of freedom)	2338.98 (798)	457.34 (278)
Goodness-of-fit index (GFI)	0.74	0.90
Adjusted goodness-of-fit index (AGFI)	0.70	0.87
Root mean square residual (RMR)	0.07	0.04
Root mean square error of approximation (RMSEA)	0.08	0.05
Non-centralized normed fit index (NCNFI)	0.81	0.96
Normed fit index (NFI)	0.74	0.89
Non-normed fit index (NNFI)	0.79	0.95

5.1 Repeated Unstructured and Structured Sorting

Given that some of the 42 questions were new, another round of unstructured and structured sorting exercises were performed. The detailed results are reported in Appendix A. Based on feedbacks from the judges, several questions were reworded to enhance clarity, but no questions were dropped because the judges thought it was not necessary to remove any item. The end result was an instrument, comprised of 42 questions that measured consumer preferences for the seven types of benefits in the context of information disclosure to Web sites.

5.2 Confirmatory Factor Analysis

The 42-question instrument was administered to another 316 senior undergraduate students who have similar demographics as those who participated in the first survey (Section 4.5) and were given a token payment for their participation. All of the 42 questions were anchored to a seven-point Likert scale ranging from strongly disagree (1) to strongly agree (7).

The collected data were subjected to a confirmatory factor analysis (CFA) using LISREL 8.51 [Joreskog and Sorbun 2001]. The instrument was refined by a series of model comparisons and respecifications which resulted in dropping an additional 16 questions. The detailed results are reported in Appendix A. After the refinements, the proposed measurement model had good fit indexes (see Table II). The final 26-question instrument is presented in Appendix B on the authors' Web site. Before the instrument can be used, we need to assess its convergent and discriminant validity.

5.3 Convergent Validity

Table III, Column 1, reports the standardized factor loadings (SFL) and composite reliability (CR) of the 26 questions, and the average variance extracted (AVE) for the seven benefit constructs. The results show that the instrument had good convergent validity (SFL ≥ 0.50 , CR ≥ 0.70 , AVE ≥ 0.50), and it nicely captured the variations in the benefit constructs [Bagozzi and Yi 1988].

Table III. Assessment of Convergent Validity

Construct	Question	Undergraduate Sample (n = 316)			Undergraduate Sample (n = 331)			Graduate Sample (n = 199)		
		SFL	CR	AVE	SFL	CR	AVE	SFL	CR	AVE
Monetary saving (MS)	MS1	0.71	0.88	0.65	0.78	0.91	0.72	0.81	0.92	0.74
	MS2	0.82			0.84			0.81		
	MS3	0.89			0.90			0.92		
	MS4	0.79			0.87			0.90		
Time saving (TS)	TS1	0.60	0.81	0.60	0.66	0.81	0.60	0.63	0.82	0.61
	TS2	0.87			0.80			0.85		
	TS3	0.82			0.84			0.85		
Self-enhancement (SE)	SE1	0.60	0.80	0.58	0.78	0.84	0.64	0.81	0.84	0.63
	SE2	0.87			0.82			0.84		
	SE3	0.83			0.80			0.74		
Social adjustment (SA)	SA1	0.82	0.74	0.50	0.85	0.75	0.50	0.74	0.72	0.47
	SA2	0.73			0.78			0.74		
	SA3	0.54			0.46			0.56		
Pleasure (PL)	PL1	0.78	0.78	0.54	0.78	0.86	0.67	0.84	0.90	0.76
	PL2	0.79			0.90			0.93		
	PL3	0.62			0.76			0.85		
Novelty (NV)	NV1	0.81	0.88	0.60	0.70	0.85	0.54	0.77	0.87	0.58
	NV2	0.75			0.71			0.67		
	NV3	0.81			0.77			0.81		
	NV4	0.76			0.71			0.72		
	NV5	0.75			0.76			0.84		
Altruism (AL)	AL1	0.71	0.89	0.63	0.68	0.91	0.66	0.76	0.91	0.68
	AL2	0.82			0.79			0.81		
	AL3	0.89			0.88			0.86		
	AL4	0.79			0.89			0.86		
	AL5	0.62			0.82			0.83		

SFL: standardized factor loading (all loadings were statistically significant at $p < 0.01$);
CR: composite reliability; AVE: average variance extracted.

5.4 Discriminant Validity

We assess discriminant validity by inspecting the correlations between the seven benefit constructs [Bagozzi and Phillips 1991]. Table IV shows that the AVE for each benefit construct exceeded the shared variance, computed based on squared correlations between that benefit construct and all the other benefit constructs. This indicates that the questions for each benefit construct correlated more highly with each other than with those for the other benefit constructs [Fornell and Larcker 1981]. Hence, the instrument had good discriminant validity.

6. APPLYING THE INSTRUMENT

The first two phases (see Sections 4 and 5) of this research ensured good measurement properties of the instrument. In the last phase, we apply the instrument to predict consumer behavior [Hair et al. 1995]. This helps assess its usefulness in general research and business contexts.

Table IV. Assessment of Discriminant Validity

Construct	MS	TS	SE	SA	PL	NV	AL
Monetary saving (MS)	0.65						
Time saving (TS)	0.15	0.60					
Self-enhancement (SE)	0.11	0.06	0.58				
Social adjustment (SA)	0.16	0.06	0.30	0.50			
Pleasure (PL)	0.10	0.09	0.13	0.18	0.54		
Novelty (NV)	0.01	0.20	0.15	0.16	0.21	0.60	
Altruism (AL)	0.01	0.05	0.18	0.15	0.11	0.37	0.63

Diagonal entries: average variance extracted; Non-diagonal entries: shared variance.

Table V. Operationalization of the Seven Types of Benefits

Benefit	Operationalization
Monetary saving	\$5 voucher to purchase something that they want
Time saving	Faster login and easier access to services that they want
Self-enhancement	Premier membership that reflects their status
Social adjustment	Affiliation to a forum comprising like-minded people
Pleasure	Entertainment that matches their interest
Novelty	New knowledge on a topic of their interest
Altruism	\$5 donation to a charity of their choice

6.1 Predictive Validity

Theoretically, consumers who prefer a particular type of benefit should be more ready to disclose their personal information to Internet businesses that provide that type of benefit. Based on this premise, another survey was conducted to assess the predictive validity of the instrument. This survey was comprised of the 26 questions in the instrument (see Appendix B) and seven questions that measure disclosure intentions when each of the seven types of benefits was provided (see Table V). All of the questions were anchored to a seven-point Likert scale ranging from strongly disagree (1) to strongly agree (7). A significant positive relationship between the preference for a type of benefit and the disclosure intention (given that type of benefit) would provide evidence of predictive validity.

The survey was administered to a fresh sample of 331 senior undergraduate students who have similar demographics as those participated in the earlier surveys (Sections 4.5 and 5.2) and were given a token payment for their effort. The collected data were subjected to all the validity tests. The results are reported in Table III, Column 2.⁹

Ordinary least squares regression was performed for each type of benefit. For each regression, the disclosure intention given one type of benefit was regressed on the average score of all questions that measure consumers' preferences for that type of benefit. All coefficients were positive and significant (see Table VI), which indicate that the preference for a type of benefit was effective in predicting disclosure intention when that type of benefit was provided. This is clear evidence of predictive validity.

⁹The standardized factor loading of one question measuring social adjustment (SA3) was marginally acceptable. All the other questions had good measurement properties.

Table VI. Assessment of Predictive Validity

Benefit	Independent Variable		Adjusted R ²
	Coefficient	Standard Error	
Monetary saving	0.34**	0.06	0.08
Time saving	0.26**	0.06	0.05
Self-enhancement	0.24**	0.06	0.04
Social adjustment	0.34**	0.07	0.07
Pleasure	0.30**	0.06	0.06
Novelty	0.28**	0.07	0.04
Altruism	0.20**	0.07	0.02

** p < 0.01.



Fig. 2. The Nomological Networks.

6.2 Nomological Validity

It is useful to examine how the seven benefit constructs relate to associated constructs in some nomological networks for two reasons. First, by linking each benefit construct to its precedent and consequent constructs, we could observe whether it varied according to a priori theoretical expectations. If proven, such results would substantiate our belief that the benefit constructs had been properly measured. Second, there might be situations where Internet businesses could not feasibly administer the instrument to consumers to find out their preferences. In such situations, one would have to depend on other factors (e.g., consumer characteristics) to gauge consumers' preferences when attempting to elicit their personal information through providing various types of benefits. The results of nomological analysis can provide Internet businesses with some ideas on how to link such factors (e.g., consumer characteristics) with consumers' preferences.

The psychology literature has presented evidence associating human personality to self-disclosure [Cozby 1973; Jourard and Lasakow 1958]. Given that self-disclosure involves cost-benefit trade-offs [Laufer and Wolfe 1977], it is plausible for human personality to affect self-disclosure behaviors via cost-benefit factors. Following this line of argument, we deduce that personality should impact consumers' preferences for benefits which, in turn, should affect their intention to disclose personal information (a key aspect of self-disclosure behavior).

In particular, the five-factor model of personality [Costa and McCrae 1992; Goldberg 1990; McCrae and Costa 1987] delineates several dimensions of personality that may influence consumers' preferences for the various types of benefits. We developed a nomological network that links each type of benefit (except monetary saving) to a relevant personality factor and then to the intention to disclose personal information when the type of benefit is provided (see Figure 2).

Activity is the extent to which people lead fast-paced lives and keep themselves busy. People strong on this personality trait tend to do many tasks simultaneously, thereby experiencing time pressure. They would welcome any means that enable them to do things faster so as to save time for other activities, meaning that *activity* should be *positively* related to preference for *time saving*.

Modesty is the extent to which people are humble and deemphasize their self-efficacy. People strong on this personality trait tend to avoid highlighting their personal achievements. They are unlikely to be motivated by opportunities to boost their own image. Hence, *modesty* should be *negatively* related to preference for *self-enhancement*.

Friendliness is the extent to which people are outgoing and pursue interpersonal intimacy. People strong on this personality trait are usually gregarious and enjoy interacting with others. They are likely to value opportunities for social interaction, particularly with like-minded others. Hence, *friendliness* should be *positively* related to preference for *social adjustment*.

Cheerfulness is the extent to which people are optimistic and enjoy life. People strong on this personality trait tend to experience positive emotions such as fun and happiness. They are likely to value means that allow them to attain such positive emotions. Hence, *cheerfulness* should be *positively* related to preference for *pleasure*.

Adventurousness is the extent to which people seek excitement and stimulation. People strong on this personality trait usually seek challenging and novel experiences. They value opportunities that allow them to explore and acquire new information. Hence, *adventurousness* should be *positively* related to preference for *novelty*.

Sympathy is the extent to which people are inclined to help others, especially the less fortunate. People strong on this personality trait are usually soft-hearted and could be moved by appeals to pity. They welcome any means that enable them to enhance the welfare of others. Hence, *sympathy* should be *positively* related to preference for *altruism*.

The six personality factors were measured using questions taken from the International Personality Item Pool (IPIP; <http://ipip.ori.org/ipip/>) [Goldberg 1999], a repository that contains an extensive collection of personality measures. The questions in IPIP were widely used in past research ([e.g., Judge et al. [2002], Saucier [2000], and Tamir et al. [2002]). We developed a new survey comprised of 60 questions that measured the six personality factors, 26 questions that measured preferences for the seven types of benefit, and 7 questions that measured disclosure intention when each of the 7 types of benefits had been provided. All the questions were anchored to a seven-point Likert scale ranging from strongly disagree (1) to strongly agree (7).

The survey was administered to 199 part-time graduate students who were given a token payment for their participation. Unlike the three previous samples, all subjects in this round had at least two years of full-time work experience and had purchased some products or services and provided personal information to some Web sites. Generally, they resemble consumers of typical Internet businesses. Hence, the results based on their responses help assure external validity.

Table VII. Assessment of Nomological Validity

Nomological Network	Coefficient	Standard Error	GFI	AGFI
Activity → Time saving	0.31**	0.09	0.91	0.85
Time saving → Disclosure intention	0.25**	0.08		
Modesty → Self-enhancement	-0.15 ⁺	0.08	0.90	0.85
Self-enhancement → Disclosure intention	0.28**	0.08		
Friendliness → Social adjustment	0.25**	0.09	0.92	0.86
Social adjustment → Disclosure intention	0.22**	0.08		
Cheerfulness → Pleasure	0.21**	0.08	0.92	0.87
Pleasure → Disclosure intention	0.24**	0.07		
Adventurousness → Novelty	0.20*	0.08	0.92	0.88
Novelty → Disclosure intention	0.35**	0.08		
Sympathy → Altruism	0.18*	0.08	0.90	0.86
Altruism → Disclosure intention	0.26**	0.07		

**p < 0.01, *p < 0.05, ⁺p < 0.10.

GFI: goodness-of-fit index; AGFI: adjusted goodness-of-fit index.

The data for the seven types of benefits were subjected to all the validity tests. The results are reported in Table III, Column 3.¹⁰ The data for the six personality factors were subjected to an exploratory factor analysis. The results show that 23 questions did not load onto the intended personality factors. After omitting these 23 questions, the remaining 37 questions loaded nicely onto the intended factors. Each personality factor was measured by a minimum of five questions.

We tested each nomological network (with one personality factor, the preference for the relevant type of benefit, and disclosure intention) with confirmatory factor analysis. All the path coefficients were in the expected directions and statistically significant, and the nomological networks had excellent goodness-of-fit indexes (see Table VII). Consistent with the results from an earlier sample (Section 6.1), the preference for each type of benefit was effective in predicting disclosure intention when that type of benefit was provided. Further, each of the six personality factors was effective in predicting the preference for one type of benefit.¹¹ These results show clear evidence of nomological validity of the instrument.

6.3 Generalizability

The measurement properties of the 26-question instrument were consistently good across all three samples of subjects (the first sample of 316 undergraduate students, the second sample of 331 undergraduate students, and the third sample of 199 graduate students; see Table III). This suggests that preferences for the seven types of benefit are generalizable to the population of consumers of Internet businesses.

¹⁰The average variance extracted for social adjustment was marginal. All the other questions had good measurement properties.

¹¹We also tested the relationship between preference for monetary saving and disclosure intention when monetary saving was provided. The regression coefficient was 0.37 (p < 0.01, adjusted R² = 0.09).

7. DISCUSSION AND IMPLICATIONS

The results of this study answer the three major research questions. *What benefits are effective in inducing consumers to disclose their personal information to Internet businesses?* Seven types of benefits that are effective for this purpose are monetary saving, time saving, self-enhancement, social adjustment, pleasure, novelty, and altruism. *How can Internet businesses gauge which benefits are more appealing to their consumers?* Internet businesses can do this using the 26-question instrument developed in this study. *What personality traits of consumers may be related to the various types of benefits?* Six types of personality traits that are related to the various types of benefits are activity, modesty, friendliness, cheerfulness, adventurousness, and sympathy.

Consumers tend to weigh benefits (i.e., disclosure motivators) against costs (exhibited by privacy concerns) [Westin 1967] when deciding whether to disclose their personal information to Internet businesses. Prior studies have examined privacy concerns that can deter consumers from disclosing their personal information ([e.g., Culnan [1993], Smith et al. [1996], and Stewart and Segars [2002]). Taking the opposite perspective, this study complements the literature by investigating disclosure motivators that can induce consumers to disclose their personal information.

The seven types of benefits (see Table I) may not be exhaustive. New types of benefits may emerge in the future. Likewise, additional personality traits or characteristics could have an effect on consumers' preferences for the various types of benefits. Future research along these lines can continue to benefit Internet businesses. Nevertheless, the results of this study suggest that to be effective in soliciting consumer information Internet businesses need to match offered benefits to the preferences of their consumers (which may be dictated by their personality traits).

7.1 Implications for Research

Several avenues for further research can be pursued. First, the seven types of benefits (see Table I) and the four types of privacy concerns reported in earlier studies [Smith et al. 1996] can be integrated into a comprehensive model to account for how consumers weigh benefits against costs when deciding whether to disclose their personal information to Internet businesses. More specifically, our instrument can be employed in conjunction with the instrument on privacy concerns ([see Smith et al. [1996]) to examine such trade-offs between benefits and costs for different populations of consumers. For instance, consumers strong on activity may be more ready to ignore privacy concerns when time saving benefits are offered, or consumers strong on sympathy may be more willing to ignore privacy concerns when altruism benefits are available.

Second, the trade-offs between benefits and costs are likely to be contingent on business contexts (e.g., the type of products or services being purchased). For example, when consumers purchase products or services that require them to maintain long-term relationships with Internet businesses (e.g., for obtaining warranty or for later upgrading of products or services), they may perceive the provision of personal information as being necessary. Then, they may be

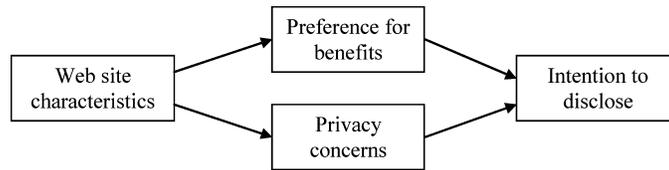


Fig. 3. Sample model with Web site characteristics.

more ready to ignore privacy concerns and request fewer benefits when disclosing their personal information. Similarly, when consumers trade with Internet businesses that they trust (perhaps due to good reputations for serving consumers well), they may also be less affected by privacy concerns and more willing to disclose their personal information for fewer benefits. It is useful to examine how business contexts like these can moderate the benefit and cost trade off when consumers disclose personal information to Internet businesses.¹² Examples of such moderators might include brand name, product quality, physical design of Web sites, or prior Internet shopping experience.

Specifically, similar to the nomological networks in Section 6.2, another set of models that involve characteristics of Web sites (i.e., consumer characteristics as in Section 6.2) such as brand name, product quality, etc., and disclosure intention, can be conceptualized. The developed instrument can then be conveniently adapted to test the models to see if the effectiveness of the various types of benefits and privacy concerns vary across Web sites of different characteristics. The general form of such a model is shown in Figure 3.

Many possible Web site characteristics could influence consumers' preferences for the seven types of benefits and their willingness to trade the benefits off against privacy costs. It is outside the scope of this study and indeed infeasible for us to test the influence of each of these characteristics. However, it is precisely the influences of a wide range of contextual (consumer or Web site) characteristics that make our instrument valuable. Future research can readily use the instrument in testing new models that involve consumers' preferences for the benefits.

Finally, beyond the context of Internet disclosure, our instrument can be modified and adapted for use in other contexts. For instance, in-home shopping research faces similar privacy issues in contexts such as catalog ordering, direct mail solicitations, and telemarketing [Darian 1987]. Consumers of in-home shopping often need to disclose their personal information, and they face similar trade-offs between benefits and costs as those who deal with Internet businesses. Therefore, trade-offs in the context of Internet businesses

¹²Preliminary empirical evidence suggests that the benefit and cost trade off is generic across business sectors. For example, Hann et al. [2003] found that the perception of consumers toward monetary and time savings, and various privacy protections do not vary much across financial, healthcare, and travel Web sites. Lu et al. [2004] found that consumers of online travel agents and online electronics stores are equally susceptible to influences of social adjustment incentives. However, these studies used hypothetical firms in laboratory experiments. Hence, factors pertaining to the business contexts may influence the usefulness of the various types of benefits in practice.

Table VIII. Preferences for the Benefits

Benefit	Undergraduate sample (n = 316)		Undergraduate sample (n = 331)		Graduate sample (n = 199)	
	Mean	%	Mean	%	Mean	%
Monetary saving	5.05	18.0	4.93	13.0	4.94	20.6
Time saving	5.61	30.4	5.57	32.0	5.85	45.2
Self-enhancement	3.97	2.5	4.29	4.2	4.58	10.6
Social adjustment	4.49	4.7	4.50	3.0	4.74	6.5
Pleasure	4.82	10.4	4.73	8.2	4.96	15.6
Novelty	4.97	9.5	5.05	10.9	5.10	20.1
Altruism	4.09	2.8	4.23	2.4	4.24	7.5

‰: percentage of subjects with scores above 6 on the seven-point scale.

can be investigated for generalizability to other contexts. In particular, in in-home shopping (and a lot of offline trading contexts), the services offered by companies tend to be less swift and inflexible when compared with those offered by Internet businesses. Hence it is possible for consumers to particularly favor benefits such as time saving, pleasure, or novelty in such contexts. Our instrument may still be used to gauge consumers' preferences for the various types of benefits in these contexts, but their actual preferences might vary considerably from what we report in this study (see Table VIII).

7.2 Implications for Practice

The seven types of benefits (see Table I) are generally desirable to consumers. Among the three samples of subjects used in this study, a good proportion of subjects showed a strong preference for each of the seven types of benefits (see Table VIII). Although most people can be motivated by monetary and time savings (see Table VIII), each type of benefit appeals to a subset of people.

Internet businesses can use the seven types of benefits to motivate consumers to disclose their personal information. Many Internet businesses are currently providing monetary saving or time saving in exchange for personal information from consumers [Chandon et al. 2000; Milne and Gordon 1993; Phelps et al. 2000]. Such efforts have yielded significant achievements for Internet businesses. For example, by offering a two-for-one movie rental voucher for Blockbuster movies, BBCshop.com managed to obtain the personal information of 15,000 new visitors to its Web site.¹³ Through its cash give-away and lucky draw promotions, Amicus Financial managed to obtain the personal information of 10,000 potential customers who had signed up to be eligible for the cash prizes.¹⁴ The prevalence and success of these efforts attest to the fact that the various types of benefits, when used appropriately in practice, can be effective market research tools to motivate consumers to engage in online disclosure.¹⁵

¹³Refer to <http://www.onlineincentives.co.uk/about/case1.php3#>.

¹⁴Refer to http://www.marketingmag.ca/image-en/section/3d_advertising/Internet-Handbook.pdf, page 9.

¹⁵Refer to <http://www.internetretailer.com/printArticle.asp?id=11534>.

While many Internet businesses may be tempted to simply follow industry practices, this study reminds them that there are other ways to solicit personal information from consumers. As examples, some Internet businesses selling specialized products or services (e.g., Macromedia and ZDNet) have succeeded in eliciting personal information from consumers by giving them access to exclusive virtual discussion forums or memberships to exclusive virtual clubs (offering self-enhancement or social adjustment benefits). Some Internet businesses in the entertainment industry (e.g., CDNow.com and Disney.com) have managed to elicit personal information from consumers by giving away sample music, video clips, and computer games (focusing on pleasure or novelty benefits). Some Web sites of charitable organizations (e.g., United Nations Children's Fund, Red Cross, and Salvation Army) have elicited personal information from donors as they make donations (offering altruism benefits). These organizations usually do not provide specific information about the effectiveness of the incentives that they offered (e.g., how many people provided their personal information before and after an incentive has been introduced). However, the popular press has unequivocally reported that many consumers do actually take advantage of such incentives when purchasing from familiar as well as new Internet businesses.

It is plausible that some types of benefits could be more effective than others, depending on the nature of Internet businesses. As the competition for personal information increases and as consumers become aware of their privacy rights, Internet businesses may eventually have to use bundles with multiple types of benefits to entice consumers to disclose personal information [Babin et al. 1994; Dhar and Wertenbrooh 2000]. Some Internet businesses, particularly those demanding plenty of personal information from consumers, have begun to do this.

The instrument developed in this study (see Appendix B) allows Internet businesses to find out the preferences of their consumers for the seven types of benefits. However, there may be situations where it is not feasible to administer this instrument to consumers (e.g., it may be prohibitively costly to conduct large-scale surveys of Internet consumers). In such situations, the key characteristics of the consumer population may offer Internet businesses some hints about which types of benefits might be more effective. For example, when operating in a polychromic society [Hall and Hall 1990] where consumers tend to be strong on activity, Internet businesses might offer time saving benefits in exchange for personal information. When operating in a collectivistic society [Triandis 1995] where consumers are likely to be strong on friendliness, Internet business might offer social adjustment benefits when soliciting personal information. When operating in risk-seeking societies [Sitkin and Weingart 1995] where consumers are likely to be strong on adventurousness, Internet businesses might offer novelty benefits in exchange for personal information.

7.3 Limitations

The findings of this study must be interpreted in the context of its limitations. Although the instrument developed in this study can be used to assess

consumers' preferences for the seven types of benefits, further efforts must be undertaken to improve this instrument because some benefit constructs (e.g., social adjustment) yielded marginal measurement properties with certain samples of subjects. New types of benefits may also emerge in the future. Further review of the psychology literature could reveal personality factors that can account for a preference for monetary saving or add to the six personality factors (see Table VII) that explain preferences for the various types of benefits.

The four samples of subjects used in this study were all students who were located in Singapore at the time of this study (three samples comprised of undergraduate students and one comprised of graduate students). Though all the subjects had experience with electronic commerce and had provided their personal information to Internet businesses, it would still be useful to assess the properties of the instrument by administering it to actual consumers of major Internet businesses. Further, because attitudes about information privacy vary around the world based on cultural norms and expectations about privacy protections, it would be valuable to replicate this study with subjects from other cultural and legal settings. Such findings can help researchers and practitioners to understand what aspects of consumers' preferences for benefits are universal and what other aspects are contingent on cultural and legal changes.

Finally, we have examined the relationship between the preferences of consumers for the various types of benefits and their disclosure intention of personal information in hypothetical situations. It would definitely be better to observe the relationship between such preferences and disclosure behavior in real-life situations where various types of actual benefits are provided by Internet businesses.

8. CONCLUSIONS

Prior studies have focused on privacy concerns that can deter consumers from disclosing their personal information to Internet businesses ([e.g., Culnan [1993], Smith et al. [1996], and Stewart and Segars [2002]). This study complements prior research by focusing on benefits that can motivate consumers to disclose their personal information to Internet businesses. It contributes to the extant literature in several important ways. First, it identifies seven types of benefits that Internet businesses can provide when soliciting personal information from consumers. Second, it presents an instrument with which Internet businesses can find out the preferences of consumers for the seven types of benefits. Third, it associates personality factors with preferences for the various types of benefits which gives Internet businesses some hints about the types of benefits that their consumers might prefer. Beyond these immediate contributions, the results of this study facilitate future efforts for developing comprehensive theories of information privacy on the Internet.

In the future, Internet businesses are likely to compete even more vigorously with each other to capture a larger piece of the fast-growing pie of electronic commerce. One effective way to compete is to target products or services at the

right customers [Novak and Phelps 1997], and this is possible only if Internet businesses have accurate information about their consumers. By exploring how consumers can be motivated to voluntarily disclose their personal information, this study (and others along this direction) hopes to make a difference in the success of Internet businesses and thereby aiding the development of electronic commerce.

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